

Abstract of the Disclosure

A motion estimator and an estimation method for a video encoder to reduce power consumption by reducing the computational complexity of the motion estimator. In an upper step, a full search for a ± 4 pixel search region for a 4×4 pixel block is performed at 1/4 video resolution, to detect two motion vector candidates. In a medium step, a partial search for two vector candidates selected in the upper step and one vector candidate using a spatial correlation is performed for a 8×8 block within a ± 1 or ± 2 search region, to decide one motion vector candidate. In a lower step, a partial search for the ± 1 or ± 2 search region on 16×16 block is performed at full resolution, and a half pixel search for a motion vector candidate obtained in the lower step is performed to estimate a final motion vector. A ± 4 pixel search region is operatively divided into four search regions, and the estimator sequentially searches the four ± 2 pixel search regions to sequentially output SAD values.